

received data include allowable values based on the domain file, and wherein the middleware program transforms the data into a form required by the server, and transmits the transformed data to the server.

37. (new) The system of claim 36, wherein the middleware program receives a result from the business transaction server and transfers the result to the interface program.

38. (new) The system of claim 36, wherein the channel comprises a kiosk.

39. (new) The system of claim 36, wherein the channel comprises a computer terminal.

A2 40. (new) The system of claim 36, wherein the channel comprises a telephone call center.

41. (new) The system of claim 36, wherein the channel comprises an electronic data transfer system.

42. (new) The system of claim 36, wherein a local area network communicatively couples the channel to the server.

43. (new) The system of claim 36, wherein a wide area network communicatively couples the channel to the server.

44. (new) The system of claim 36, wherein portions of the domain file may be changed without changing code of the middleware program.

45. (new) The system of claim 36, wherein the middleware program generates an error code if the portions of the received data include values that are not allowable values.

46. (new) The system of claim 45, further comprising a domain manager, and wherein the domain file comprises at least one serialized file generated by the domain manager.
47. (new) The system of claim 36, wherein the middleware program transfers data to a plurality of business transaction servers during the processing of a business transaction.
48. (new) The system of claim 36, wherein the middleware program comprises computer code written in an object-oriented programming language.
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49. (new) The system of claim 36, wherein the middleware program is extendable without altering source code of the middleware program.
50. (new) The system of claim 49, wherein an extension to the middleware program comprises computer code that is stored in a package and run when the middleware program runs.
51. (new) A carrier medium that stores program instructions, wherein the program instructions are computer-executable to implement:
- receiving data from one interface program of a plurality of interface programs, wherein each interface program is communicatively coupled to one of a plurality of channels;
- determining whether a portion of received data includes values in a list of allowable values;
- flattening the data; and
- transferring the data to a business transaction server;
- wherein the program instructions comprise a plurality of objects.

52. (new) The carrier medium of claim 51, wherein the channel comprises a kiosk.
53. (new) The carrier medium of claim 51, wherein the channel comprises a computer terminal.
54. (new) The carrier medium of claim 51, wherein the channel comprises a telephone call center.
55. (new) The carrier medium of claim 51, wherein the channel comprises an electronic data transfer system.
56. (new) The carrier medium of claim 51, wherein a local area network communicatively couples the channel to the server.
57. (new) The carrier medium of claim 51, wherein a wide area network communicatively couples the channel to the server.
58. (new) The carrier medium of claim 51, further comprising a separate set of computer instructions that extend the functionality of the set of computer instructions.
59. (new) The carrier medium of claim 51, further comprising at least one file that stores the list of allowable values.
60. (new) The carrier medium of claim 51, wherein the program instructions are further computer-executable to implement:

receiving a result from the business transaction server;

inflating the result; and

transferring the result to the interface program.

61. (new) A method of performing a business transaction on a computer system using a user interface program, a middleware program, and a business transaction server, comprising:

- entering data into a channel that communicatively couples to the user interface;
- transferring the data to the middleware program;
- determining whether a portion of the data includes values in a list of allowable values;
- transforming the data into a form required by the business transaction server using the middleware program;
- a2* transferring the data to the business transaction server using the middleware program; and
- processing the data using the business transaction server.

62. (new) The method of claim 61, further comprising transferring results from the business transaction server to the middleware program, and transferring results from the middleware program to the user interface.

63. (new) The method of claim 62, wherein the middleware program transforms the results into a form recognizable to the user interface program before transmitting the results to the user interface.

64. (new) The method of claim 61, further comprising generating an error code if an entered data value is not included in the list of allowable values.

65. (new) The method of claim 64, wherein the list of allowable values is located in serialized files during use.

66. (new) The method of claim 65, wherein the serialized domain files are generated from domain files by a domain manager.
67. (new) The method of claim 61, wherein the middleware program determines if all required data to process the business transaction is present before transferring the data to the business transaction server, and wherein the middleware program generates an error code if all the required data is not present before the data is transferred to the business transaction server.
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68. (new) The method of claim 61, wherein the middleware program orders the data into an order required by the business transaction server before transferring the data to the business transaction server.
69. (new) The method of claim 61, wherein the middleware program transfers data to and receives results from a plurality of business transaction servers during processing of the business transaction.
70. (new) The method of claim 61, wherein the business transaction server comprises a legacy program.

Response to Office Action Mailed August 2, 2002

A. Claims In The Case

Claims 1-35 have been rejected. Claims 1-35 have been canceled. Claims 36-70 have been added. Claims 36-70 are pending in the case.

B. Specification

The Examiner has objected to the Specification as failing to describe the invention in a manner that distinguishes it from the prior art. However, the Examiner states that, “p.5-18 in most part describe the prior art as applicable to certain embodiments of the invention.” (Office Action, p.2, paragraph 1). Applicant respectfully submits that in the statement quote above, the Examiner acknowledges that the specification describes how certain prior art elements relate to certain embodiments of the invention. It follows that the Examiner is able to distinguish the certain embodiments of the invention from the prior art. Applicant further submits that the application as originally filed includes a number of claims and an abstract, which also distinguish the invention from the prior art.

The Examiner has also objected to the Specification as being unclear in recitation of problems outlined that the invention solves. In this regard, the Examiner quoted the sentence, “A middleware program that provides a functional interface between a user interface and a business transaction server may in large part solve the problems outlined above” from page 3, line 9 of the Specification. The Specification has been amended to clarify the sentence quoted by the Examiner.

The Examiner has further objected to the Specification as failing to clearly recite what the applicant regards as the invention. The Examiner's attention is directed to 35 USC 112 second paragraph which states, "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." Applicant respectfully submits that the application as originally filed complies with the requirements of 35 USC 112 second paragraph and therefore, clearly recites what Applicant regards as the invention.

C. The Claims Are Not Obvious Over The Cited Art Pursuant To 35 U.S.C. § 103(a)

The Examiner has rejected claims 1-35 as being unpatentable over U.S. Patent 6,115,693 to McDonough, et al. (hereinafter "McDonough"). Applicant respectfully disagrees with these rejections; however, to expedite examination of the application, claims 1-35 have been cancelled.

New independent claim 36 states in part, "a domain file, wherein the domain file comprises a list of allowable values associated with one or more business transactions," and further, "wherein the middleware program determines whether portions of the received data include allowable values based on the domain file." Similarly, new independent claim 51 states in part, "determining whether a portion of received data includes values in a list of allowable values." Additionally, new independent claim 61 states in part, "determining whether a portion of the data includes values in a list of allowable values." The Specification, as originally submitted, provides support for the features of a domain file including a list of allowable values and the middleware program determining whether received input includes allowable values. For example, the specification states:

A domain defines the valid characteristics for a business field, including, when appropriate, a list of the permissible values that the business field may contain. For example, valid values for marital status might be M = married, S = single, D = divorced, P = separated, and C = common law marriage. If a user mistakenly tries

to enter “E” as a value for marital status, an error code would be sent to the user interface program 44. The name of the domain and its associated business field may be stored in a domain-attribute file. A domain source file may define the characteristics and, if appropriate, a listing of the valid values for the domain. A domain manager may be used to serialize both the domain-attribute file and the domain source file for use during program execution. (Specification, p. 15, lines 3-11).

In order to reject a claim as obvious, the Examiner has the burden of establishing a *prima facie* case of obviousness. *In re Warner et al.*, 379 F.2d 1011, 154 USPQ 173, 177-178 (CCPA 1967). To establish a *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974), MPEP § 2143.03.

In the Office Action, regarding claim 1 (now cancelled) the Examiner states that, “validation of data into a form required by a server is old and well known.” Examples provided by the Examiner include, “name to be input as alpha characters, birthday specified as month-day-year, etc.” The Examiner appears to be referring to assigning a data type to an input. Applicant respectfully submits that the Examiner has not established *prima facie* obviousness with respect to providing a list of allowable values which a middleware program checks to determine if an input value is allowable.

For at least the reasons stated above, Applicant respectfully submits that new independent claims 36, 51 and 61, and claims dependent thereon, are patentable over McDonough.

D. Many Of The Dependent Claims Are Separately Patentable

The Examiner is also respectfully requested to separately consider each of the dependent claims for patentability. Many of the dependent claims in addition to those mentioned above are independently patentable.

For instance, claim 44 states in part, “wherein portions of the domain file may be changed without changing code of the middleware program.” McDonough does not appear to teach or suggest the feature of changing a domain file including a list of allowable values without modifying the middleware program code.

Additionally, claim 49 states in part, “wherein the middleware program is extendable without altering source code of the middleware program.” McDonough does not appear to teach or suggest the feature of extending the middleware program without altering the source code of the middleware program.

E. Summary

Based on the above, Applicant submits that all claims are in condition for allowance. Favorable reconsideration is respectfully requested.